
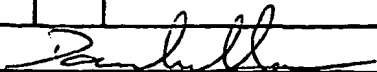


| Sheet 1 of 1 | | INFORMATION DISCLOSURE STATEMENT | | | | | |
|--|----|----------------------------------|--------------------|------------------------------------|-------|---|----------------------------|
| FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary) Date Submitted to PTO: January 12, 2006 | | | | ATTY DOCKET NO. 2000_1326 | | SERIAL NO. 09/669,916 | |
| | | | | APPLICANT Mitsuki OSHIMA et al. | |  | |
| | | | | FILING DATE September 25, 2000 | | | |
| U.S. PATENT DOCUMENTS | | | | | | | |
| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
| DH | AA | 4,597,090 | 6-24-86 | Forney, Jr. | — | — | — |
| | AB | 4,077,021 | 2-28-78 | Csajka et al. | — | — | — |
| | AC | 2005/0004750 | 4-21-05 | Wang et al. | — | — | — |
| | AD | 2005/0058633 | 3-17-05 | Epstein et al. | — | — | — |
| | AE | 2005/0922822 | — | — | — | — | — |
| | AF | 4,918,437 | 4-17-90 | Jasinski et al. | — | — | — |
| | AG | 5,023,889 | 6-11-91 | Divsalar et al. | — | — | — |
| | AH | 5,063,452 | 11-5-91 | Higurashi | — | — | — |
| | AI | 5,124,852 | 6-23-92 | Suwa et al. | — | — | — |
| | AJ | 5,136,380 | 8-4-92 | Cho | — | — | — |
| | AK | 5,146,335 | 9-8-92 | Kim et al. | — | — | — |
| | AL | 5,148,422 | 9-15-92 | Sako et al. | — | — | — |
| DH | AM | 5,218,436 | 6-8-93 | Sugiyama et al. | — | — | — |
| FOREIGN PATENT DOCUMENTS | | | | | | | |
| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO |
| DH | AN | 2627574 | 7-21-04 | CN | — | — | — |
| DH | AO | 1529838 | 5-11-05 | EP | — | — | abstract |
| DH | AP | 1499725 | 5-26-04 | CN | — | — | only abstract |
| DH | AQ | 2004-159207 | 6-3-04 | JP | — | — | corresponds to AP |
| DH | AR | 1528854 | 5-11-05 | EP | — | — | only abstract |
| DH | AS | 52118 | 12-16-02 | UA | — | — | only abstract |
| DH | AT | 1569334 | 1-26-05 | CN | — | — | x |
| OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.) | | | | | | | |
| AU | | | | | | | |
| EXAMINER  | | | | DATE CONSIDERED 01/30/06 | | | |

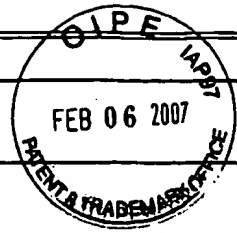
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include cop, this form with next communication to applicant.

INFORMATION DISCLOSURE STATEMENT

FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

Date Submitted to PTO: February 6, 2007

ATTY DOCKET NO.
2000_1326SERIAL NO.
09/669,916APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 25, 2000GROUP
2634

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
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| | AA | | | | | | |
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FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO | |
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| /DH/ | AJ | 3-13145 | 1-22-91 | Japan | | | abstract | |
| /DH/ | AK | 4-322592 | 11-12-92 | Japan | | | abstract | |
| /DH/ | AL | 63-253738 | 10-20-88 | Japan | | | abstract | |
| /DH/ | AM | 62-502932 | 11-19-87 | Japan | | | abstract | |
| /DH/ | AN | 58-107740 | 6-27-83 | Japan | | | abstract | |

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

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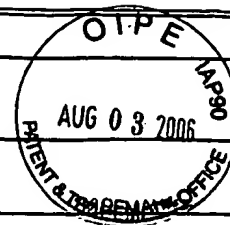
03/06/2007

INFORMATION DISCLOSURE STATEMENT

FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

Date Submitted to PTO: August 3, 2006

ATTY DOCKET NO.
2000_1326SERIAL NO.
09/669,916APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 25, 2000GROUP
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U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
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| /DH/ | AA | 4,267,592 | 5-12-81 | Craiglow | | | |
| /DH/ | AB | 4,601,045 | 7-15-86 | Lubarsky | | | |
| /DH/ | AC | 4,912,706 | 3-27-90 | Eisenberg et al. | | | |
| /DH/ | AD | 4,914,655 | 4-3-90 | Johannes et al. | | | |
| /DH/ | AE | 5,018,198 | 5-21-91 | Takahashi | | | |
| /DH/ | AF | 4,003,002 | 1-11-77 | Snijders et al. | | | |
| /DH/ | AG | 4,053,713 | 10-11-77 | Nitadori | | | |
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FOREIGN PATENT DOCUMENTS

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OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

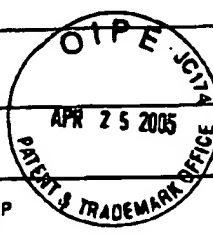
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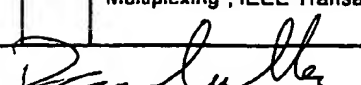
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| Sheet 1 of 2 | | INFORMATION DISCLOSURE STATEMENT | | | | | |
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| FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary) Date Submitted to PTO: April 25, 2005 | | | ATTY DOCKET NO. 2000_1326 | | SERIAL NO. 09/669,916 | |  |
| | | | APPLICANT Mitsuaki OSHIMA et al. | | | | |
| | | | FILING DATE September 25, 2000 | | GROUP 2634 | | |
| U.S. PATENT DOCUMENTS | | | | | | | |
| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
| DH | AA | 3,959,726 | 5-25-76 | Hinoshita et al. | — | — | — |
| | AB | 4,535,352 | 8-85 | Haskell | — | — | — |
| | AC | 4,564,858 | 1-14-86 | Resch | — | — | — |
| | AD | 4,769,819 | 9-6-88 | Matsutani et al. | — | — | — |
| | AE | 4,817,192 | 3-28-89 | Phillips et al. | — | — | — |
| | AF | 5,029,003 | 7-91 | Jonnalagadda | — | — | — |
| | AG | 5,134,464 | 7-28-92 | Basile et al. | — | — | — |
| | AH | 5,400,084 | 3-21-95 | Scarpa | — | — | — |
| DH | AI | 4,800,426 | 1-24-89 | Glenn | — | — | — |
| FOREIGN PATENT DOCUMENTS | | | | | | | |
| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO |
| DH | AJ | 3-48587 | 3-1-91 | Japan | — | — | abstract |
| | AK | | | | | | |
| | AL | | | | | | |
| | AM | | | | | | |
| | AN | | | | | | |
| OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.) | | | | | | | |
| DH | AO | Masafumi SAITO et al., "Bit Error Rate Characteristics of OFDM in Multipath Environment", 1991 | | | | | |
| DH | AP | Ryutaro OHMOTO et al., "π/4-shift QPSK Subcarrier Transmission", 1991 | | | | | |
| | AQ | | | | | | |
| EXAMINER <u>D. Miller</u> | | | | DATE CONSIDERED <u>06/30/05</u> | | | |

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include cop. this form with next communication to applicant.

| Sheet 2 of 2 | | INFORMATION DISCLOSURE STATEMENT | | | | | |
|--|----|--|-------------------------------------|-----------------|--------------------------|----------|---|
| FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary) Date Submitted to PTO: April 25, 2005 | | | ATTY DOCKET NO. 2000_1326 | | SERIAL NO. 09/669,916 | |  |
| | | | APPLICANT Mitsuaki OSHIMA et al. | | | | |
| | | | FILING DATE September 25, 2000 | | GROUP 2634 | | |
| U.S. PATENT DOCUMENTS | | | | | | | |
| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
| DH | AA | 5,561,468 | 10-1-96 | Bryan et al. | — | — | — |
| | AB | 5,181,112 | 1-19-93 | Citta et al. | — | — | — |
| | AC | 5,377,051 | 12-27-94 | Lane et al. | — | — | — |
| | AD | 5,576,902 | 11-19-96 | Lane et al. | — | — | — |
| | AE | 5,218,622 | 6-8-93 | Fazel et al. | — | — | — |
| | AF | 5,598,220 | 1-97 | Citta et al. | — | — | — |
| DH | AG | 5,007,088 | 4-9-91 | Ooi et al. | — | — | — |
| | AH | | | | | | |
| | AI | | | | | | |
| FOREIGN PATENT DOCUMENTS | | | | | | | |
| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO |
| | AJ | | | | | | |
| | AK | | | | | | |
| | AL | | | | | | |
| | AM | | | | | | |
| | AN | | | | | | |
| OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.) | | | | | | | |
| DH | AO | J. A. C. Bingham, "Multicarrier Modulation for Data Transmission: An Idea Whose Time Has Come", IEEE Communications Magazine, Vol. 28, May 1990, pages 5-8 and 11-14 | | | | | |
| DH | AP | B. Hirosaki, "An Orthogonally Multiplexed QAM System Using the Discrete Fourier Transform", IEEE Transactions on Communications, Vol. Com-29, No. 7, July 1981, pages 982-989 | | | | | |
| DH | AQ | L. J. Cimini, Jr., "Analysis and Simulation of a Digital Mobile Channel Using Orthogonal Frequency Division Multiplexing", IEEE Transactions on Communications, Vol. Com-33, No. 7, July 1985, pages 665-675 and Annex | | | | | |
| EXAMINER | | | | DATE CONSIDERED | | | |
|  | | | | 06/30/05 | | | |

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Date Submitted to PTO: September 25, 2000

ATTY DOCKET NO.
2000_1326SERIAL NO.
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Mitsuaki OSHIMA et al.FILING DATE
September 25, 2000

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U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|----------------------|----|--------------------|----------|-----------------|-------|----------|-------------------------------|
| AS | AA | 4,227,152 | 10-7-80 | Godard et al. | I | I | |
| | AB | 4,525,846 | 6-25-85 | Bremer et al. | I | I | |
| | AC | 4,751,478 | 6-14-88 | Yoshida | I | I | |
| | AD | 4,891,806 | 1-2-90 | Farias et al. | I | I | |
| | AE | 4,903,125 | 2-20-90 | Parker | I | I | |
| | AF | 4,937,844 | 6-26-90 | Kao | I | I | |
| | AG | 5,164,963 | 11-17-92 | Lawrence et al. | I | I | |
| | AH | 5,555,275 | 9-1996 | Oshima | I | I | |
| | AI | | | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO |
|--|----|--------------------|---------|---------|-------|----------|-----------------------|
| | AJ | 0311188 | 4-12-89 | EP | I | I | X |
| | AK | 0329158 | 8-23-89 | EP | I | I | X |
| | AL | 64-5135 | 1-10-89 | JP | I | I | X |
| | AM | 63-28145 | 2-5-88 | JP | I | I | X |
| | AN | 62-133842 | 6-17-87 | JP | I | I | X |

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

| | | |
|----|----|---|
| | AO | Tricia Hill et al., "A Performance Study of NLA 64-State QAM", IEEE Transactions on Communications, vol. COM-31, June 1983, no. 6, pages 821-826. |
| | AP | Hideki Ishio et al., "A Proposal of a Carrier Digital Transmission System Using Multi-Level APSK", pages 1-20. v date |
| AS | AQ | Shanmugam, "Digital and Analog Communication Systems" 1979, p. 272. |

EXAMINER

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DATE CONSIDERED

08.20.02

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO 1449 (modified)

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PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
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Date Submitted to PTO: September 25, 2000

ATTY DOCKET NO.
2000_1326SERIAL NO.
NEW

09/14/99/16

APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 25, 2000

GROUP

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|----------------------|----|--------------------|----------|-----------------|-------|----------|-------------------------------|
| se | AA | 5,311,550 | 5-10-94 | Fouche et al. | | | |
| | AB | 4,630,287 | 12-16-86 | Armstrong | | | |
| | AC | 4,271,527 | 6-2-81 | Armstrong | | | |
| | AD | 5,050,188 | 9-17-91 | Dirr | | | |
| | AE | 5,398,073 | 3-14-95 | Wei | | | |
| | AF | 5,452,015 | 9-19-95 | Hulyalkar | | | |
| | AG | 5,565,932 | 10-15-96 | Gitta et al. | | | |
| | AH | 5,481,412 | 1-2-96 | Bannai et al. | | | |
| | AI | 3,909,721 | 9-30-75 | Bussgang et al. | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO |
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| | AJ | 0365431 | 4-25-90 | EP | | | X |
| | AK | 0485105 | 5-13-92 | EP | | | X |
| | AL | 92/14343 | 8-20-92 | WO | | | X |
| | AM | 89/08366 | 9-8-89 | WO | | | X |
| | AN | 0031193 | 7-1-81 | EP | | | X |

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

| | | |
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| | AO | Shinji Matsumoto et al., "200 Mb/s 16 QAM Digital Radio-Relay System Operating in 4 and 5 GHz Bands", Japan Telecommunications Review, January 1982, vol. 24, no. 1, pages 65-73. |
| | AP | M. Pecot et al., "Compatible Coding of Television Images, Part 2. Compatible System", Signal Processing Image Communication, October 2, 1990, no. 3, pages 259-268. |
| se | AQ | Mitsuaki Oshima, "Constellation-Code Division Multiplex for Digital HDTV", IEEE, 1992, pages 1086-1092. |

EXAMINER

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DATE CONSIDERED

08.26.02

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FORM PTO 1449 (modified)

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PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

Date Submitted to PTO: September 25, 2000

ATTY DOCKET NO.
2000_1326SERIAL NO.
NEW

159/109916

APPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 25, 2000

GROUP

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|----------------------|----|--------------------|----------|--------------------|-------|----------|-------------------------------|
| AS | AA | 5,105,442 | 4-14-92 | Wei | I | I | |
| | AB | 4,048,572 | 9-13-77 | Dogliotti et al. | I | I | |
| | AC | 5,282,019 | 1-25-94 | Basile et al. | I | I | |
| | AD | 5,311,547 | 5-10-94 | Wei | I | I | |
| | AE | 5,267,021 | 11-30-93 | Ramchandran et al. | I | I | |
| | AF | 5,038,219 | 8-6-91 | Yamashita et al. | I | I | |
| | AG | 5,087,975 | 2-11-92 | Citta et al. | I | I | |
| | AH | 5,086,340 | 2-4-92 | Citta et al. | I | I | |
| | AI | | | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO |
|--|----|--------------------|----------|---------|-------|----------|-----------------------|
| | AJ | 53-137657 | 12-1-78 | JP | I | I | X |
| | AK | 0282298 | 9-14-88 | Europe | I | I | X |
| | AL | 0392538 | 10-17-90 | Europe | I | I | X |
| | AM | 0490552 | 6-17-92 | Europe | I | I | X |
| | AN | 0508400A2 | 9-30-92 | Europe | I | I | |

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

| | | |
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| | AO | Khaled Fazel et al., Combined multilevel coding and multiresolution modulation, February 8, 1993, Pages 1081-1085 |
| | AP | P. Hoehner et al., Performance of an RCPC-Coded OFDM-based Digital Audio Broadcasting (DAB) System, IEEE Global Telecommunications Conference "Globecom '91", December 2-5, 1991, Vol. 1 of 3, Pages 2.1.1 - 2.1.7 |
| AS | AQ | K. M. Uz et al., Combined multiresolution source coding and modulation for digital broadcast of HDTV*, 1992, Pages 283-292 |

EXAMINER

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DATE CONSIDERED

08.20.02

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FORM PTO 1449 (modified)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
(Use several sheets if necessary)

Date Submitted to PTO: September 25, 2000

ATTY DOCKET NO.
2000_1326SERIAL NO.
NEWAPPLICANT
Mitsuaki OSHIMA et al.FILING DATE
September 25, 2000

GROUP

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|----------------------|----|--------------------|----------|-------------------------|-------|----------|-------------------------------|
| AS | AA | 5,142,353 | 8-25-92 | Kageyama et al. | I | I | |
| | AB | 5,197,061 | 3-23-93 | Halbert-Lassalle et al. | I | I | |
| | AC | 5,291,289 | 3-1-94 | Hulyalkar et al. | I | I | |
| AS | AD | 5,166,924 | 11-24-92 | Moose | I | I | |
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| AS | AJ | 0448492A1 | 9-25-91 | Europe | I | I | |
| | AK | 0485108A2 | 5-13-92 | Europe | I | I | |
| | AL | 0525641A2 | 2-3-93 | Europe | I | I | |
| | AM | 0540231A2 | 5-5-93 | Europe | I | I | |
| | AN | 0531046A2 | 3-10-93 | Europe | I | I | |

OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

| | | |
|----|----|--|
| | AO | K. M. Uz et al., Multiresolution Source and Channel Coding for Digital Broadcast of HDTV, 1992, Pages 61-69. |
| | AP | Nambi Seshadri et al., Multi-Level Block Coded Modulations with Unequal Error Protection for the Rayleigh Fading Channel, Vol. 4, No. 3, May-June 1993, Pages 325-334. |
| AS | AQ | William F. Schreiber, Spread-Spectrum Television Broadcasting, SMPTE Journal, August 1992, Pages 538-549. |

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PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)
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Date Submitted to PTO: September 25, 2000

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Mitsuaki OSHIMA et al.FILING DATE
September 25, 2000

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U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
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| | AA | | | | | | |
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| AD | AJ | 85/04541 | 10-10-85 | WO | — | — | |
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Date Submitted to PTO: September 25, 2000

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Mitsuaki OSHIMA et al.FILING DATE
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